

Serial No. 10/072,364
Reply to Office Action dated February 11, 2008

Docket No. 3655/0138PUS1

REMARKS/ARGUMENTS

Claims 1-54 are pending in the above application. By the above amendment, claim 24 has been amended, and claims 52-54 have been added.

The Office Action dated February 11, 2008, has been received and carefully reviewed. In that Office Action, claims 1, 3, 5, 24, 37, 41 and 47 were rejected under 35 U.S.C. 102(e) as being anticipated by Menon. Claims 1-4, 6, 7, 13-17, 24-33, 35-37, 41, 42 and 44 were rejected under 35 U.S.C. 103(a) as being unpatentable over Skene in view of Brendel, and claims 8-10, 18-23, 34, 38-40, 43 and 47-51 were rejected under 35 U.S.C. 103(a) as being unpatentable over Skene in view of Brendel and further in view of Zisapel. Claims 11, 12 45 and 46 were rejected under 35 U.S.C. 103(a) as being unpatentable over Skene in view of Brendel and further in view of Cohen. Each of these issues is addressed below, and reconsideration and allowance of claims 1-54 is respectfully requested in view of the following remarks.

STATEMENT OF SUBSTANCE OF THE INTERVIEW

The following statement of the substance of the interview is provided pursuant to MPEP 713.04. A personal interview was held on June 10, 2008, between Examiner Charles Anya and Applicant's representative, Scott Wakeman. No exhibits were shown. Claims 1, 24, 37, 41, 47 and 52 were discussed as were the Menon, Skene and Brendel references. Applicant's representative argued that Menon did not show a client-controlled load balancer as claimed. The examiner indicated that the limitation "client-controlled" did not distinguish over Menon. Possible amendments to the independent claims were discussed. Applicant's representative argued that it was not clear how the examiner was proposing to modify Skene based on Brendel. The

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examiner explained that he was proposing to move Skene's "server array controllers 110-112" and "EDNS 160" into client pool 140. No agreement was reached.

REJECTIONS BASED ON MENON

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Menon. Claim 1 recites a method that includes providing a load balancer not associated with a virtual server, the load balancer being a client-controlled load balancer that directly selects one of a plurality of servers representing a virtual server based on one or more parameters selected by the load balancer. Menon shows a more-or-less traditional load balancer in which a program 128 at a switch 106 makes decisions regarding which one of a plurality of servers to use based on criteria such as server bandwidth. Program 128 referred to in the Office Action is associated with servers 108 and is not a client-controlled load balancer as recited in claim 1. Nothing in Menon suggests in any manner that clients 104 control program 128. Moreover, Menon's load balancing is based on server load and not on a parameter of a path defined between a point in the vicinity of a client and one of the servers. Program 128 would not, for example, be aware of network congestion in the vicinity of client 104 when determining which of servers 108 to use. For at least these reasons, Menon does not show or suggest a method of load balancing using a client-controlled load balancer as recited in claim 1.

If the rejection of claim 1 based on Menon is not withdrawn, it is respectfully requested that the examiner explain 1) how program 128 is being interpreted as a client-controlled load balancer and 2) how program 128 provides parameters of two or more paths, each path defined between a point in a vicinity of a client accessing the virtual server and one of the plurality of servers representing the virtual server, as

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recited in claim 1 so that the basis for this rejection can be better understood. During the interview, the examiner suggested that the limitation "client-controlled" could mean almost anything. It therefore appears that the examiner is not giving patentable weight to this limitation. If this is correct, it is respectfully requested that the examiner make this reasoning of record and provide a basis for disregarding a claim limitation. If Applicant misunderstood the examiner's arguments, it is respectfully requested that clarification be provided.

Claims 2-23 depend from claim 1 and are submitted to be allowable for at least the same reasons as claim 1.

Claim 24, as amended, recites a method of selecting a server that includes a client-controlled load balancer that directly selects one of the servers based on one or more parameters related to a path to the client. As discussed above in connection with claim 1, Menon does not disclose a client-controlled load balancer and does not show a load balancer that selects a server based on a path to a client. Claim 24 is therefore submitted to be allowable for at least the same reasons as claim 1.

Claims 25-36 depend from claim 24 and are submitted to be allowable for at least the same reasons as claim 24.

Claim 37 also recites a method of selecting a server that involves a client-controlled load balancer. The method further involves selecting a server based at least in part on a cost of communications between the client and one or more of the plurality of servers. The Office Action indicates that such a method is shown by paragraph 0010 of Menon. However, that paragraph of Menon only mentions selecting a server based on server-specific factors or based on client connection speeds or locations. Menon does not discuss communication costs. Claim 37 is submitted to be allowable for at

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least this reason. If this rejection of claim 37 is not withdrawn, it is respectfully requested that the examiner provide further clarification on how Menon is being interpreted to disclose a decision based on communication costs as recited in claim 37. During the interview, the examiner suggested that "cost" was equivalent to "bandwidth" and that this interpretation justified the rejection of claim 37. If the examiner is relying on such an interpretation of "cost," it is respectfully requested that arguments to support this interpretation be made of record.

Claims 38-40 depend from claim 37 and are submitted to be allowable for at least the same reasons as claim 37.

Claim 41 recites a load balancer that includes a client-controlled processor that directly selects a server. Claim 41 also recites that the processor is adapted to determine whether a message from a client requires load balancing, and that this determination is based on at least one attribute other than the identity of the server referenced by the message. Menon does not make decisions regarding whether a message from a client requires load balancing based on some attribute of the message other than the identify of the server to which the message is directed. Menon also does not disclose a client-controlled load balancer. Claim 41 is submitted to be allowable over Menon for at least this reason.

If the rejection of claim 41 is not withdrawn, it is respectfully requested that the examiner explain 1) how Menon discloses a client-controlled load balancer and 2) what attribute of a client message (that is not the identity of a server) Menon uses to determine whether the message requires load balancing so that the basis for this rejection can be better understood. During the interview, the examiner again referred to cost being equivalent to bandwidth to support the rejection of this claim. As discussed

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above, the basis for this interpretation is not clear. Moreover, bandwidth is not an attribute of a client message as recited in claim 41, and this further distinguishes claim 41 over the interpretation apparently being used by the examiner. Clarification of this point is requested if the rejection of claim 41 is maintained.

Claims 42-46 depend from claim 41 and are submitted to be allowable for at least the same reasons as claim 41.

Claim 47 recites a method of selecting a server to be accessed using a client-controlled load balancer. This client-controlled load balancer directly selects a server to be accessed based on one of a plurality of functions. As discussed above, Menon does not show or suggest a client-controlled load balancer as recited in claim 47. Menon therefore does not anticipate claim 47, and the allowance of claim 47 is respectfully requested.

Claims 48-51 depend from claim 47 and are submitted to be allowable for at least the same reasons as claim 47.

New claim 52 is also submitted to be allowable over Menon. Claim 52 recites a method of selecting a server to be accessed via a WAN from among a plurality of servers hosting a domain name. The method includes providing a client-controlled load balancer in a LAN connected to the WAN, receiving a list of addresses of servers hosting a domain name, and selecting one of the servers based on a parameter related to a path between a point in the vicinity of the client and one of the plurality of servers. Menon does not show a client-controlled load balancer, does not show a load-balancer in a LAN with a client, and does not show a load balancer that selects one of a number of provided addresses based on a parameter that relates to a path between a point in the vicinity of the client and one of the plurality of servers. Claim 52 is submitted to be

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allowable over Menon for at least these reasons.

Claim 53 further distinguishes over Menon by reciting that the parameter that relates to the path is time-variable. Claim 54 further distinguishes over Menon by reciting that the parameter is a measure of communication quality.

REJECTIONS BASED ON SKENE AND BRENDDEL

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skene in view of Brendel. As an initial matter, it is not clear what modification to Skene is being proposed, and therefore, it is respectfully submitted that a prima facie case of obviousness has not been presented. As set forth in MPEP 706.02(j), in order to support a rejection under 35 U.S.C. 103(a), "the examiner should set forth in the Office action: (A) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate, (B) the difference or differences in the claim over the applied reference(s), (C) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and (D) an explanation as to why the claimed invention would have been obvious to one of ordinary skill in the art at the time the invention was made (emphasis added)." In the present case, the Office Action indicates that Skene should be modified "with the teachings of Brendel"; however, the modification being proposed by the examiner is not clear. It is therefore respectfully requested that the examiner explain in the next Office Action specifically how Skene is to be modified so that the rejection of claim 1 can be better understood.

Skene teaches load balancing using a SAC and an EDSL. As acknowledged in the Office Action, Skene does not disclose a client-controlled load balancer. All load

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balancing is apparently performed in a traditional manner. Brendel also teaches that load balancing decisions are made in a traditional manner by a load balancer 70. After this load balancing has been performed, the selected server sends information directly to the requesting client rather than via the load balancer (Column 2, lines 47-52). However, all incoming packets are still routed to the selected server via the load balancer. Skene's invention is to tell the client machine what server to use so that, after a server is selected by a traditional load balancer, the client can thereafter communicate directly with that server. As acknowledged in Brendel, Brendel's client "cannot perform traditional load balancing without knowledge of the loads of each server at the server farm, or knowledge of requests from other clients." It does not appear that Brendel's client is ever provided with such information. Brendel goes on to provide, "Thus, the inventor prefers the term 'client-side dispatcher' since client request are dispatched to various servers." Brendel thus teaches a dispatcher that works with a traditional load balancer, but that does not do any load balancing itself.

During the interview, the examiner advised that he was proposing to modify Skene by moving the server array controllers 110-112 and EDNS 160 into client pool 140 and that Brendel suggested this modification. The basis for this change appeared to be the use of the phrase "client side load balancer" in Brendel. However, it is respectfully submitted that Brendel uses a traditional load balancer 70 for load balancing. After an appropriate server has been selected, further communication between the server and the client is carried out directly rather than through load balancer 70. As provided by Brendel,

Of course, the client-side load balancer cannot perform traditional load balancing without knowledge of the loads of each server at the server farm, or knowledge of requests from other clients. Thus the inventor

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prefers the term "client-side dispatcher" since client requests are dispatched to various servers.

Brendel further notes that the load balancing information used by client-side dispatcher 20 is provided by load balancer 70 (column 10, lines 26-31). The only limited load balancing function carried out by the client side dispatcher itself is to send multiple requests to servers and treat the first server to respond as the server to use (column 5, lines 37-40). However, this is not what is recited in claim 1. Moreover, the fact that Brendel does not move load balancer 70 into client browser 10 suggests that SAC 110-112 and ESDN 160 of Skene should not be moved into client pool 140. Therefore, if this rejection is maintained, it is respectfully requested that the examiner clarify how Brendel can suggest that Skene's load balancers should be moved into the client pool when Brendel himself does not teach moving a load balancer into a client. For at least these reasons, claim 1 is submitted to patentably distinguish over Skene in view of Brendel, and reconsideration and allowance of Brendel is respectfully requested.

Claims 2-23 depend from claim 1 and are submitted to be allowable for at least the same reasons as claim 1.

Claim 24 also recites a client-controlled load balancer and a selection by a client of a server to use based on one or more parameters related to a path to the client. Neither Skene nor Brendel, alone or in combination, suggests a client-controlled load balancer that directly selects a server based on a parameter related to a path to a client. Claim 24 is submitted to be allowable for at least these reasons as well as for the reasons provided above in connection with claim 1.

Claims 25-36 depend from claim 24 and are submitted to be allowable for at

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least the same reasons as claim 24.

Claim 37 recites a method of selecting a server that involves a client-controlled load balancer. The client-controlled load balancer directly selects a server based on one or more parameters related to a communications cost between client and server. The references are silent as to a selection made based on communications cost. The fact that Skene refers to the use of "a variety of load balancing metrics" does not indicate that communication cost is one of those metrics. If the examiner is relying on an inherency argument to show that communications cost is necessarily one of the metrics referred to in Skene, it is respectfully submitted that the requirements for relying on inherency as set forth in MPEP 2112 have not been satisfied. If the examiner is not relying on an inherency argument in connection with the rejection of claim 37, it is respectfully requested that the examiner explain with greater detail where Skene shows a parameter related to communication cost between a client and a selected server. Claim 37 is submitted to be allowable over Skene and Brendel at least because the above limitation is not shown by either reference and also for the reasons provided above in connection with claim 1.

Claims 38-40 depend from claim 37 and are submitted to be allowable for at least the same reasons as claim 37.

Claim 41 recites a load balancer that includes a client-controlled processor that directly selects a server for the load balancer. The processor determines from client messages whether the message requires load balancing based on something other than the identify of the server being requested. The art of record does not show or suggest a client-controlled load balancer that directly selects a server as recited in claim 41, and claim 41 is submitted to be allowable for at least this reason.

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Claims 42-46 depend from claim 41 and are submitted to be allowable for at least the same reasons as claim 41.

Claim 47 recites a method of selecting a server that includes directly selecting a server by a client-controlled load balancer. Such a client-controlled load balancer is not shown or suggested by the art of record, and claim 47 is submitted to be allowable for at least this reason.

Claims 48-51 depend from claim 47 and are submitted to be allowable for at least the same reasons as claim 47.

New claim 52 is also submitted to be allowable over Skene and Brendel. Claim 52 recites a method of selecting a server to be accessed by a client via a wide area network (WAN) from among a plurality of servers associated with a domain name that involves providing a client-controlled load balancer in a local area network (LAN) connected to the WAN, the LAN including the client, receiving at the load balancer a list of addresses of servers hosting the domain name, and selecting by the load balancer one of the addresses of the plurality of servers based on a parameter related to a path between a point in the vicinity of the client and one of the plurality of servers. Such a method is not shown or suggested by Skene or Brendel, and claim 52, and its dependent claims 53 and 54, are submitted to be allowable for at least this reason.

REJECTIONS BASED ON SKENE, BRENDEL AND ZISAPEL

Claims 8-10 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skene in view of Brendel and further in view of Zisapel. Claims 8-10 and 18-23 depend from claim 1. Zisapel does not address the shortcomings of Skene and Brendel discussed above in connection with claim 1. Claims 8-10 and 18-23 are

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therefore submitted to be allowable for at least the same reasons as claim 1.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skene in view of Brendel and further in view of Zisapel. Claim 34 depends from claim 24. Zisapel does not address the shortcomings of Skene and Brendel discussed above in connection with claim 24. Claim 34 is therefore submitted to be allowable for at least the same reasons as claim 24.

Claims 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skene in view of Brendel and further in view of Zisapel. Claims 38-40 depend from claim 37. Zisapel does not address the shortcomings of Skene and Brendel discussed above in connection with claim 37. Claims 38-40 are therefore submitted to be allowable for at least the same reasons as claim 37.

Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skene in view of Brendel and further in view of Zisapel. Claim 43 depends from claim 41. Zisapel does not address the shortcomings of Skene and Brendel discussed above in connection with claim 41. Claim 43 is therefore submitted to be allowable for at least the same reasons as claim 41.

Claims 47-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skene in view of Brendel and further in view of Zisapel. Claims 47-51 depend from claim 46. Zisapel does not address the shortcomings of Skene and Brendel discussed above in connection with claim 46. Claims 47-51 are therefore submitted to be allowable for at least the same reasons as claim 46.

REJECTIONS BASED ON SKENE, BRENDEL AND COHEN

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable

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over Skene in view of Brendel and further in view of Cohen. Claims 11 and 12 depend from claim 1. Cohen does not address the shortcomings of Skene and Brendel discussed above in connection with claim 1. Claims 11 and 12 are therefore submitted to be allowable for at least the same reasons as claim 1.

Claims 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skene in view of Brendel and further in view of Cohen. Claims 45 and 46 depend from claim 41. Cohen does not address the shortcomings of Skene and Brendel discussed above in connection with claim 41. Claims 45 and 46 are therefore submitted to be allowable for at least the same reasons as claim 1.

CONCLUSION

Each issue raised in the Office Action dated February 11, 2008, has been addressed, and it is believed that claims 1-54 are in condition for allowance. Wherefore, reconsideration and allowance of these claims is earnestly solicited. If the examiner believes that any additional changes would place the application in better condition for allowance, the examiner is invited to contact Scott Wakeman (Reg. No. 37,750) at the telephone number listed below.

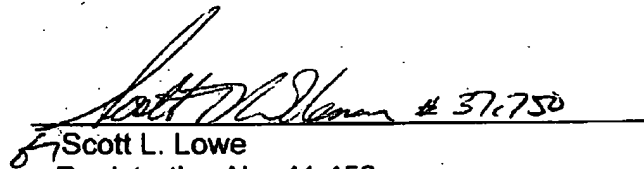
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Deposit Account Authorization

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 50-3828 and please credit any excess fees to such deposit account.

Respectfully submitted,


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Date: June 11, 2008